

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/751,702A
Source: 1FW16
Date Processed by STIC: 1/19/07

ENTERED

CRF Errors Edited by the STIC Systems Branch

Serial Number: 10/751,702A

CRF Edit Date: 1/19/07
Edited by: Ar

— Realigned nucleic acid/amino acid numbers/text in cases where the sequence text "wrapped" to the next line

✓

Corrected the SEQ ID NO. Sequence numbers edited were:

40

— Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

— Deleted: ___ invalid beginning/end-of-file text ; ___ page numbers

— Inserted mandatory headings/numeric identifiers, specifically:

— Moved responses to same line as heading/numeric identifier, specifically:

— Other:



IFW16

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/751,702A

DATE: 01/19/2007
TIME: 12:27:27

Input Set : A:\PTO.txt
Output Set: N:\CRF4\01192007\J751702A.raw

3 <110> APPLICANT: Tuomanen, Elaine I
4 Wizemann, Theresa M.
5 Masure, H. R.
6 Johnson, Leslie S.
7 Koenig, Scott
9 <120> TITLE OF INVENTION: POLYPEPTIDE COMPRISING THE AMINO ACID OF AN N-TERMINAL
10 CHOLINE BINDING PROTEIN A TRUNCATE, VACCINE DERIVED
11 THEREFROM AND USES THEREOF
13 <130> FILE REFERENCE: 044158/273011
15 <140> CURRENT APPLICATION NUMBER: 10/751,702A
16 <141> CURRENT FILING DATE: 2004-01-05
18, <150> PRIOR APPLICATION NUMBER: 09/056,019
19 <151> PRIOR FILING DATE: 1998-04-07
21 <160> NUMBER OF SEQ ID NOS: 42
23 <170> SOFTWARE: PatentIn Ver. 2.0
25 <210> SEQ ID NO: 1
26 <211> LENGTH: 406
27 <212> TYPE: PRT
28 <213> ORGANISM: Streptococcus pneumoniae
30 <400> SEQUENCE: 1
31 Glu Asn Glu Gly Ala Thr Gln Val Pro Thr Ser Ser Asn Arg Ala Asn
32 1 5 10 15
34 Glu Ser Gln Ala Glu Gln Gly Glu Gln Pro Lys Lys Leu Asp Ser Glu
35 20 25 30
37 Arg Asp Lys Ala Arg Lys Glu Val Glu Glu Tyr Val Lys Lys Ile Val
38 35 40 45
40 Gly Glu Ser Tyr Ala Lys Ser Thr Lys Lys Arg His Thr Ile Thr Val
41 50 55 60
43 Ala Leu Val Asn Glu Leu Asn Asn Ile Lys Asn Glu Tyr Leu Asn Lys
44 65 70 75 80
46 Ile Val Glu Ser Thr Ser Glu Ser Gln Leu Gln Ile Leu Met Met Glu
47 85 90 95
49 Ser Arg Ser Lys Val Asp Glu Ala Val Ser Lys Phe Glu Lys Asp Ser
50 100 105 110
52 Ser Ser Ser Ser Ser Asp Ser Ser Thr Lys Pro Glu Ala Ser Asp
53 115 120 125
55 Thr Ala Lys Pro Asn Lys Pro Thr Glu Pro Gly Glu Lys Val Ala Glu
56 130 135 140
58 Ala Lys Lys Lys Val Glu Glu Ala Glu Lys Lys Ala Lys Asp Gln Lys
59 145 150 155 160
61 Glu Glu Asp Arg Arg Asn Tyr Pro Thr Ile Thr Tyr Lys Thr Leu Glu
62 165 170 175
64 Leu Glu Ile Ala Glu Ser Asp Val Glu Val Lys Lys Ala Glu Leu Glu

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/751,702A

DATE: 01/19/2007

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Input Set : A:\PTO.txt

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65	180	185	190
67	Leu Val Lys Val Lys Ala Asn Glu Pro Arg Asp Glu Gln Lys Ile Lys		
68	195	200	205
70	Gln Ala Glu Ala Glu Val Glu Ser Lys Gln Ala Glu Ala Thr Arg Leu		
71	210	215	220
73	Lys Lys Ile Lys Thr Asp Arg Glu Glu Ala Glu Glu Ala Lys Arg		
74	225	230	235
76	Arg Ala Asp Ala Lys Glu Gln Gly Lys Pro Lys Gly Arg Ala Lys Arg		240
77	245	250	255
79	Gly Val Pro Gly Glu Leu Ala Thr Pro Asp Lys Lys Glu Asn Asp Ala		
80	260	265	270
82	Lys Ser Ser Asp Ser Ser Val Gly Glu Glu Thr Leu Pro Ser Pro Ser		
83	275	280	285
85	Leu Lys Pro Glu Lys Lys Val Ala Glu Ala Glu Lys Lys Val Glu Glu		
86	290	295	300
88	Ala Lys Lys Ala Glu Asp Gln Lys Glu Glu Asp Arg Arg Asn Tyr		
89	305	310	315
91	Pro Thr Asn Thr Tyr Lys Thr Leu Glu Leu Glu Ile Ala Glu Ser Asp		
92	325	330	335
94	Val Glu Val Lys Lys Ala Glu Leu Glu Leu Val Lys Glu Glu Ala Lys		
95	340	345	350
97	Glu Pro Arg Asn Glu Glu Lys Val Lys Gln Ala Lys Ala Glu Val Glu		
98	355	360	365
100	Ser Lys Lys Ala Glu Ala Thr Arg Leu Glu Lys Ile Lys Thr Asp Arg		
101	370	375	380
103	Lys Lys Ala Glu Glu Ala Lys Arg Lys Ala Ala Glu Glu Asp Lys		
104	385	390	395
106	Val Lys Glu Lys Pro Ala		400
107	405		
110	<210> SEQ ID NO: 2		
111	<211> LENGTH: 655		
112	<212> TYPE: PRT		
113	<213> ORGANISM: Streptococcus pneumoniae		
115	<400> SEQUENCE: 2		
116	Glu Asn Glu Gly Ala Thr Gln Val Pro Thr Ser Ser Asn Arg Ala Asn		
117	1	5	10
			15
119	Glu Ser Gln Ala Glu Gln Gly Glu Gln Pro Lys Lys Leu Asp Ser Glu		
120	20	25	30
122	Arg Asp Lys Ala Arg Lys Glu Val Glu Glu Tyr Val Lys Lys Ile Val		
123	35	40	45
125	Gly Glu Ser Tyr Ala Lys Ser Thr Lys Lys Arg His Thr Ile Thr Val		
126	50	55	60
128	Ala Leu Val Asn Glu Leu Asn Asn Ile Lys Asn Glu Tyr Leu Asn Lys		
129	65	70	75
			80
131	Ile Val Glu Ser Thr Ser Glu Ser Gln Leu Gln Ile Leu Met Met Glu		
132	85	90	95
134	Ser Arg Ser Lys Val Asp Glu Ala Val Ser Lys Phe Glu Lys Asp Ser		
135	100	105	110
137	Ser Ser Ser Ser Ser Asp Ser Ser Thr Lys Pro Glu Ala Ser Asp		

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 PATENT APPLICATION: US/10/751,702A TIME: 12:27:27

Input Set : A:\PTO.txt
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138	115	120	125	
140	Thr Ala Lys Pro Asn Lys Pro Thr Glu Pro Gly Glu Lys Val Ala Glu			
141	130	135	140	
143	Ala Lys Lys Lys Val Glu Glu Ala Glu Lys Lys Ala Lys Asp Gln Lys			
144	145	150	155	160
146	Glu Glu Asp Arg Arg Asn Tyr Pro Thr Ile Thr Tyr Lys Thr Leu Glu			
147	165	170	175	
149	Leu Glu Ile Ala Glu Ser Asp Val Glu Val Lys Lys Ala Glu Leu Glu			
150	180	185	190	
152	Leu Val Lys Val Lys Ala Asn Glu Pro Arg Asp Glu Gln Lys Ile Lys			
153	195	200	205	
155	Gln Ala Glu Ala Glu Val Glu Ser Lys Gln Ala Glu Ala Thr Arg Leu			
156	210	215	220	
158	Lys Lys Ile Lys Thr Asp Arg Glu Glu Ala Glu Glu Ala Lys Arg			
159	225	230	235	240
161	Arg Ala Asp Ala Lys Glu Gln Gly Lys Pro Lys Gly Arg Ala Lys Arg			
162	245	250	255	
164	Gly Val Pro Gly Glu Leu Ala Thr Pro Asp Lys Lys Glu Asn Asp Ala			
165	260	265	270	
167	Lys Ser Ser Asp Ser Ser Val Gly Glu Glu Thr Leu Pro Ser Pro Ser			
168	275	280	285	
170	Leu Lys Pro Glu Lys Lys Val Ala Glu Ala Glu Lys Lys Val Glu Glu			
171	290	295	300	
173	Ala Lys Lys Lys Ala Glu Asp Gln Lys Glu Glu Asp Arg Arg Asn Tyr			
174	305	310	315	320
176	Pro Thr Asn Thr Tyr Lys Thr Leu Glu Leu Glu Ile Ala Glu Ser Asp			
177	325	330	335	
179	Val Glu Val Lys Lys Ala Glu Leu Glu Leu Val Lys Glu Glu Ala Lys			
180	340	345	350	
182	Glu Pro Arg Asn Glu Glu Lys Val Lys Gln Ala Lys Ala Glu Val Glu			
183	355	360	365	
185	Ser Lys Lys Ala Glu Ala Thr Arg Leu Glu Lys Ile Lys Thr Asp Arg			
186	370	375	380	
188	Lys Lys Ala Glu Glu Ala Lys Arg Lys Ala Ala Glu Glu Asp Lys			
189	385	390	395	400
191	Val Lys Glu Lys Pro Ala Glu Gln Pro Gln Pro Ala Pro Ala Pro Lys			
192	405	410	415	
194	Ala Glu Lys Pro Ala Pro Ala Pro Lys Pro Glu Asn Pro Ala Glu Gln			
195	420	425	430	
197	Pro Lys Ala Glu Lys Pro Ala Asp Gln Gln Ala Glu Glu Asp Tyr Ala			
198	435	440	445	
200	Arg Arg Ser Glu Glu Glu Tyr Asn Arg Leu Thr Gln Gln Gln Pro Pro			
201	450	455	460	
203	Lys Thr Glu Lys Pro Ala Gln Pro Ser Thr Pro Lys Thr Gly Trp Lys			
204	465	470	475	480
206	Gln Glu Asn Gly Met Trp Tyr Phe Tyr Asn Thr Asp Gly Ser Met Ala			
207	485	490	495	
209	Thr Gly Trp Leu Gln Asn Asn Gly Ser Trp Tyr Tyr Leu Asn Ser Asn			
210	500	505	510	

RAW SEQUENCE LISTING DATE: 01/19/2007
 PATENT APPLICATION: US/10/751,702A TIME: 12:27:27

Input Set : A:\PTO.txt
 Output Set: N:\CRF4\01192007\J751702A.raw

212 Gly Ala Met Ala Thr Gly Trp Leu Gln Asn Asn Gly Ser Trp Tyr Tyr
 213 515 520 525
 215 Leu Asn Ala Asn Gly Ser Met Ala Thr Gly Trp Leu Gln Asn Asn Gly
 216 530 535 540
 218 Ser Trp Tyr Tyr Leu Asn Ala Asn Gly Ser Met Ala Thr Gly Trp Leu
 219 545 550 555 560
 221 Gln Tyr Asn Gly Ser Trp Tyr Tyr Leu Asn Ala Asn Gly Ser Met Ala
 222 565 570 575
 224 Thr Gly Trp Leu Gln Tyr Asn Gly Ser Trp Tyr Tyr Leu Asn Ala Asn
 225 580 585 590
 227 Gly Asp Met Ala Thr Gly Trp Val Lys Asp Gly Asp Thr Trp Tyr Tyr
 228 595 600 605
 230 Leu Glu Ala Ser Gly Ala Met Lys Ala Ser Gln Trp Phe Lys Val Ser
 231 610 615 620
 233 Asp Lys Trp Tyr Tyr Val Asn Gly Ser Gly Ala Leu Ala Val Asn Thr
 234 625 630 635 640
 236 Thr Val Asp Gly Tyr Gly Val Asn Ala Asn Gly Glu Trp Val Asn
 237 645 650 655
 240 <210> SEQ ID NO: 3
 241 <211> LENGTH: 284
 242 <212> TYPE: PRT
 243 <213> ORGANISM: Streptococcus pneumoniae
 245 <400> SEQUENCE: 3
 246 Glu Asn Glu Gly Ala Thr Gln Val Pro Thr Ser Ser Asn Arg Ala Asn
 247 1 5 10 15
 249 Glu Ser Gln Ala Glu Gln Gly Glu Gln Pro Lys Lys Leu Asp Ser Glu
 250 20 25 30
 252 Arg Asp Lys Ala Arg Lys Glu Val Glu Glu Tyr Val Lys Lys Ile Val
 253 35 40 45
 255 Gly Glu Ser Tyr Ala Lys Ser Thr Lys Lys Arg His Thr Ile Thr Val
 256 50 55 60
 258 Ala Leu Val Asn Glu Leu Asn Ile Lys Asn Glu Tyr Leu Asn Lys
 259 65 70 75 80
 261 Ile Val Glu Ser Thr Ser Glu Ser Gln Leu Gln Ile Leu Met Met Glu
 262 85 90 95
 264 Ser Arg Ser Lys Val Asp Glu Ala Val Ser Lys Phe Glu Lys Asp Ser
 265 100 105 110
 267 Ser Ser Ser Ser Ser Asp Ser Ser Thr Lys Pro Glu Ala Ser Asp
 268 115 120 125
 270 Thr Ala Lys Pro Asn Lys Pro Thr Glu Pro Gly Glu Lys Val Ala Glu
 271 130 135 140
 273 Ala Lys Lys Lys Val Glu Glu Ala Glu Lys Lys Ala Lys Asp Gln Lys
 274 145 150 155 160
 276 Glu Glu Asp Arg Arg Asn Tyr Pro Thr Ile Thr Tyr Lys Thr Leu Glu
 277 165 170 175
 279 Leu Glu Ile Ala Glu Ser Asp Val Glu Val Lys Lys Ala Glu Leu Glu
 280 180 185 190
 282 Leu Val Lys Val Lys Ala Asn Glu Pro Arg Asp Glu Gln Lys Ile Lys
 283 195 200 205

RAW SEQUENCE LISTING DATE: 01/19/2007
PATENT APPLICATION: US/10/751,702A TIME: 12:27:27

Input Set : A:\PTO.txt
Output Set: N:\CRF4\01192007\J751702A.raw

285 Gln Ala Glu Ala Glu Val Glu Ser Lys Gln Ala Glu Ala Thr Arg Leu
286 210 215 220
288 Lys Lys Ile Lys Thr Asp Arg Glu Glu Ala Glu Glu Ala Lys Arg
289 225 230 235 240
291 Arg Ala Asp Ala Lys Glu Gln Gly Lys Pro Lys Gly Arg Ala Lys Arg
292 245 250 255
294 Gly Val Pro Gly Glu Leu Ala Thr Pro Asp Lys Lys Glu Asn Asp Ala
295 260 265 270
297 Lys Ser Ser Asp Ser Ser Val Gly Glu Glu Thr Leu
298 275 280
301 <210> SEQ ID NO: 4
302 <211> LENGTH: 106
303 <212> TYPE: PRT
304 <213> ORGANISM: Streptococcus pneumoniae
306 <400> SEQUENCE: 4
307 Lys Pro Glu Lys Lys Val Ala Glu Ala Glu Lys Lys Val Glu Glu Ala
308 1 5 10 15
310 Lys Lys Lys Ala Glu Asp Gln Lys Glu Glu Asp Arg Arg Asn Tyr Pro
311 20 25 30
313 Thr Asn Thr Tyr Lys Thr Leu Glu Leu Glu Ile Ala Glu Ser Asp Val
314 35 40 45
316 Glu Val Lys Lys Ala Glu Leu Glu Leu Val Lys Glu Glu Ala Lys Glu
317 50 55 60
319 Pro Arg Asn Glu Glu Lys Val Lys Gln Ala Lys Ala Glu Val Glu Ser
320 65 70 75 80
322 Lys Lys Ala Glu Ala Thr Arg Leu Glu Lys Ile Lys Thr Asp Arg Lys
323 85 90 95
325 Lys Ala Glu Glu Ala Lys Arg Lys Ala
326 100 105
329 <210> SEQ ID NO: 5
330 <211> LENGTH: 109
331 <212> TYPE: PRT
332 <213> ORGANISM: Streptococcus pneumoniae
334 <400> SEQUENCE: 5
335 Thr Glu Pro Gly Glu Lys Val Ala Glu Ala Lys Lys Lys Val Glu Glu
336 1 5 10 15
338 Ala Glu Lys Lys Ala Lys Asp Gln Lys Glu Glu Asp Arg Arg Asn Tyr
339 20 25 30
341 Pro Thr Ile Thr Tyr Lys Thr Leu Glu Leu Glu Ile Ala Glu Ser Asp
342 35 40 45
344 Val Glu Val Lys Lys Ala Glu Leu Glu Leu Val Lys Val Lys Ala Asn
345 50 55 60
347 Glu Pro Arg Asp Glu Gln Lys Ile Lys Gln Ala Glu Ala Glu Val Glu
348 65 70 75 80
350 Ser Lys Gln Ala Glu Ala Thr Arg Leu Lys Lys Ile Lys Thr Asp Arg
351 85 90 95
353 Glu Glu Ala Glu Glu Ala Lys Arg Arg Ala Asp Ala
354 100 105
357 <210> SEQ ID NO: 6

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 01/19/2007
PATENT APPLICATION: US/10/751,702A TIME: 12:27:28

Input Set : A:\PTO.txt
Output Set: N:\CRF4\01192007\J751702A.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:6; Xaa Pos. 2,3
Seq#:27; Xaa Pos. 1
Seq#:28; Xaa Pos. 243
Seq#:40; Xaa Pos. 1,44,45,46,47,48,49,50,51,52,53,54,64,65,66,68,69,114,115
Seq#:40; Xaa Pos. 116,131,132,133,134,135,136,137,138,139,140,141,142,143
Seq#:40; Xaa Pos. 144,145,146,147,148,149,150,151,173,174,175,176,177,178
Seq#:40; Xaa Pos. 179,262,275,276,277,281,428,470

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/751,702A

DATE: 01/19/2007

TIME: 12:27:28

Input Set : A:\PTO.txt

Output Set: N:\CRF4\01192007\J751702A.raw

L:369 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0
L:1102 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:0
L:1162 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28 after pos.:240
L:2202 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:2209 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:40
L:2213 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:40
L:2214 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:40 after pos.:0
M:341 Repeated in SeqNo=40
L:2288 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:2292 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:41
L:2296 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:41
L:2300 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:41

**Raw Sequence Listing before editing
(for reference only)**



IFW16

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/10/751,702A

DATE: 01/17/2007
 TIME: 14:32:16

Input Set : A:\seq list 1-11-97.txt
 Output Set: N:\CRF4\01172007\J751702A.raw

3 <110> APPLICANT: Tuomanen, Elaine I
 4 Wizemann, Theresa M.
 5 Masure, H. R.
 6 Johnson, Leslie S.
 7 Koenig, Scott
 9 <120> TITLE OF INVENTION: POLYPEPTIDE COMPRISING THE AMINO ACID OF AN N-TERMINAL
 10 CHOLINE BINDING PROTEIN A TRUNCATE, VACCINE DERIVED
 11 THEREFROM AND USES THEREOF
 13 <130> FILE REFERENCE: 044158/273011
 15 <140> CURRENT APPLICATION NUMBER: 10/751,702A
 16 <141> CURRENT FILING DATE: 2004-01-05
 18 <150> PRIOR APPLICATION NUMBER: 09/056,019
 19 <151> PRIOR FILING DATE: 1998-04-07
 21 <160> NUMBER OF SEQ ID NOS: 42
 23 <170> SOFTWARE: PatentIn Ver. 2.0

*Does Not Comply
 Corrected Diskette Needed*

ERRORED SEQUENCES

see p.3

VERIFICATION SUMMARY

DATE: 01/17/2007

PATENT APPLICATION: US/10/751,702A

TIME: 14:32:17

Input Set : A:\seq list 1-11-97.txt

Output Set: N:\CRF4\01172007\J751702A.raw

L:369 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0
L:1102 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:0
L:1162 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28 after pos.:240
L:2202 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:2209 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:40
L:2213 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:40
L:2213 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:40 differs:1
L:2214 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
M:341 Repeated in SeqNo=40
L:2288 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:2292 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:41
L:2296 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:41
L:2300 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:41

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<210> 40
<211> 492
<212> PRT
<213> Artificial Sequence

<220>
<223> consensus sequence for CbpA N-terminal region

<221> VARIANT
<222> 1, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 64, 65, 66, 68, 69, 114, 115, 116, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 173, 174, 175, 176, 177, 178, 179, 262, 275
<223> Xaa = Any Amino Acid or other (i.e., deletion)

<221> VARIANT
<222> 276, 277, 281, 428, 470
<223> Xaa = Any Amino Acid or other (i.e., deletion)

<400> (1) 40 ← change to